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United States Department of Agriculture
Forest Service
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Reply To: 3420

Date: October 16, 1990

Mr. Bud Thayer
Saint Germain Foundation
P.O. Box 347
Dunsmuir, CA 96025

Dear Mr. Thayer:

This is to document the visit of Gregg DeNitto, pathologist, and David Schultz, entomologist, with you and Gene Fleet on September 5, 1990. The purpose of the visit was to evaluate declining giant sequoia on the St. Germain Foundation property in Dunsmuir.

Three incense-cedars had died in the vicinity of the declining giant sequoia over the past several years and had been removed. Don Owen, Pest Management Specialist, CDF&FP, had previously determined that Heterobasidion annosum, cause of annosus root disease, was involved in their mortality.

The declining giant sequoia was about 25 feet from the closest dead incense-cedar. The sequoia had dying branches in the bottom of the crown. The older foliage was dying back first. This is usually indicative of a root related problem. We removed some roots of the sequoia near its base and found popcorn conks of H. annosum. It appears that the fungus has spread from the root systems of the incense-cedars to the giant sequoia. Most of the root collar (the base of the tree at the ground line) of the giant sequoia has already died and it can be expected that the crown will die entirely within the next year.

We discussed several control options for this situation and for preventing the formation of future annosus root disease pockets. The formation of annosus root disease centers can be prevented by applying a light coating of borax to any freshly cut conifer stump. This should be done within 4 hours of felling a tree.

Stopping the further expansion of the existing disease pocket to nearby giant sequoias and other conifers is more difficult. Because the fungus grows through the root systems of trees and occupies a substantial portion of the root system before symptoms are observed in the crown, what may appear to be drastic measures must be taken to stop its spread. Removal of infected woody tissue is required to stop the spread. This must include the removal of trees that don't have any obvious symptoms of decline to assure that all infected tissue is removed and that root contacts are broken.

The following was suggested for the situation at St. Germain. After the rainy season has begun and the soil has become wet, the infected tree should be pulled over to remove as much of the root system as possible. In addition, there are two giant sequoias about 20 feet away in different directions that should also be pulled over. Even though they appear healthy, because of their proximity to the infected tree and the extent of the infection, I am rather certain that the fungus has already infected their root system. Without their removal, the fungus will continue to spread and the root disease will enlarge. After the trees have been removed, any hardwood species can be planted in the area. Conifers should be avoided even though most of the infected root tissue has been removed. Small amounts of infected material may be sufficient to infect conifers that are introduced to the site.

In addition to this root disease situation, we looked at some dead and dying dogwoods in the areas of the Oriental garden. These trees had one or more annual cankers on their bole, usually with a dead branchlet near the center of the canker. We collected samples from these trees to determine the cause. At this time, a causal organism has not been identified, but I will continue to pursue this.

If you have any questions about our observations or control suggestions, please contact Dave Schultz or me at (916) 246-5101.

Gregg DeNitto

GREGG DeNITTO
Forest Pathologist
FPM Northern California Service Area

cc. Bob Malain, CDF&FP
Don Owen, CDF&FP